



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/422,134	10/20/1999	HUA CHEN	SONY-50N3575	5160

7590

06/10/2004

WAGNER MURABITO & HAO LLP
TWO NORTH MARKET STREET
THIRD FLOOR
SAN JOSE, CA 95113

EXAMINER

JACKSON, JAKIEDA R

ART UNIT

PAPER NUMBER

2655

DATE MAILED: 06/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/422,134

Applicant(s)

CHEN ET AL.

Examiner

Jakieda R Jackson

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 15-20 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 is/are allowed.
- 6) ☒ Claim(s) 8-11 and 14 is/are rejected.
- 7) ☒ Claim(s) 12 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-14, drawn to muting or replacing a portion of an encoded bitstream of audio data for error concealment, classified in class 704, subclass 228.
 - II. Claims 15-20, drawn to reducing audio frame over-run to eliminate annoying and confusing sounds, classified in class 704, subclass 500.
2. The inventions are distinct, each from the other because of the following reasons:
Inventions I and II are related as combination and subcombination, respectively.
3. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the muted signal does not have to be generated by error detection. Instead with invention II, the mute signal is not needed for error concealment but can be generated as a result of user input, for example a channel change command (refer to claim 16). The

subcombination has separate utility such as error concealment. If there is an error detected the current frame will either be muted (as discussed in claims 1-7) or the previous frame will be duplicated (as discussed in claim 8-14).

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Anthony C. Murabito on 4/5/04 a provisional election was made without traverse to prosecute the invention of I (error concealment), claims 1-14. Affirmation of this election must be made by applicant in replying to this Office action. Claims 15-20 (reducing audio frame over-run) are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

7. The disclosure is objected to because of the following informalities:

- page 5, lines 15-16 contains a phrase, instead of a full sentence.
- Page 6, line 4, the sentence ends with 2 periods (".."). One of the periods should be deleted.

This lists a few examples of the minor typographical errors. The specification should be proofread and corrections completed if application is allowed.

Appropriate correction is required.

8. **Claim 3, 6, 8 and 11** are objected to because of the following informalities:

- Regarding **claim 3**, "step b)" should be --step a2)--.
- Regarding **claim 6**, "steps a2), b), c), and d)" should be --steps a1) and a2)--.
- Regarding **claim 8**, line 6, "b)" should be deleted.
- Regarding **claim 11**, line 15, "b4)" should be --c4)--.

Appropriate correction is required.

Drawings

9. The drawings submitted were use for examination purposes but formal drawings are required if application is allowed.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 8-9 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Dierke (U.S. Patent No. 5,918,205) in view of Kitabatake (U.S. Patent No. 5,890,112).

Regarding **claims 8 and 11**, Dierke discloses a method for muting a portion of an encoded bitstream of audio information (figure 4 with column 4, lines 20-65) comprising the steps of:

a) detecting if a current encoded audio frame of said encoded bitstream contains an error (column 1, lines 52-55 with column 4, lines 8-13); and

b) provided an error is detected, repeating a previous decoded audio frame in lieu of said current encoded audio frame (column 2, lines 10-14) comprising the steps of:

b1) obtaining decoded data of said previous audio frames (column 2, lines 5-6);

b2) generating a repeated audio frame by replicating (replay) said decoded data of said previous audio frame (previous audio frame) for use in lieu of said current encoded audio frame (column 2, lines 10-14); but lacks

b3) modifying said repeated audio frame by adding delay information of a last block of said previous audio frame with pulse code modulated (PCM) data of a first block of a first block of said repeated audio frame to generate new decoded data for said first audio frame; and

b4) sending said repeated audio frame to an audio output buffer for playout.

Kitabatake discloses b3) modifying said repeated audio frame by adding delay information of a last block of said previous audio frame (previous frame) with pulse code modulated (PCM) data of a first block (block data BD; column 3, lines 2-17 with lines 30-35) of a first block of said repeated (repeated) audio frame to generate new decoded data (block data BD with no error) for said first audio frame (column 10, lines 5-22); and

b4) sending said repeated audio frame to an audio output buffer (operation memory; figure 3, element 24), for playout (outputs the signal; column 9, line 63 – column 10, line 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Dierke's invention such that it modifies the repeated audio frame and sends the repeated frame to an audio output buffer, to provide an audio decoding device capable of conducting decoding operation processing for block data with no error at any time and to present output of an erroneous compression signal (column 3, lines 48-59).

Regarding **claim 9**, Dierke discloses a method wherein b1) obtains said decoded data (decoded errors) from said decoded data from said audio output buffer (column 1, lines 43-51).

12. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Dierke in view of Kitabatake in further view of Suzuki et al. (U.S. Patent No. 5,347,478), hereinafter referenced as Suzuki.

Regarding **claim 10**, Dierke in view of Kitabatake discloses a method for muting a portion of an encoded bitstream of audio information but lacks wherein step b3) comprises the step of:

shuffling and weighting said delay information to generate shuffled and weighted delay information;

weighting said PCM data to generate weighted PCM data;

adding said shuffled and weighted delay information with said weighted PCM data to generate said new decoded data for said first block of said repeated audio frame.

Suzuki discloses the method wherein step b3) comprises:

shuffling (shift) and weighting (weight) said delay information (delay sections) to generate shuffled and weighted delay information (column 45, lines 29-52);

weighting said PCM data to generate weighted PCM data (PCM form of a uniform weight; column 14, lines 10-27);

adding (adders; figure 25, elements 170 and 177) said shuffled and weighted delay information (column 45, lines 29-52) with said weighted PCM data (column 14, lines 10-27) to generate said new decoded data for said first block (first block) of said repeated audio frame (column 30, line 52 – column 31, line 9), for compression in the most effective manner.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Dierke's invention such it generates shuffled and weighted information, generates weighed PCM data and add said shuffled and weighted delay information with said weighted PCM data to generate said new decoded data for said first block, for compressing data freely and in an effective manner (column 2, lines 34-38).

13. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong in view of Dierke in further view of Dokic et al. (U.S. Patent No. 6,009,389), hereinafter referenced as Dokic.

Regarding **claim 14**, Wong in view of Dierke discloses a method for muting a portion of an encoded bitstream of audio information but lacks a method wherein said encoded bitstream of audio information is substantially compliant with AC3 digital audio standard.

Dokic discloses the method wherein said encoded bitstream of audio information is substantially compliant with AC3 digital audio standard (column 3, line 4 – column 4, line 33), to achieve a high coding gain.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wong's invention such that the encoded bitstream of audio information is substantially compliant with AC3 digital audio standard, so that the state of the art digital audio decoder is at least capable of supporting multiple compression/decompression formats for a complex processing system with a more efficient method of handling errors (column 2, lines 2-24).

Allowable Subject Matter

14. Claims 1-7 are allowed.

The following is a statement of reasons for allowance:

As for independent **claim 1**, it is allowed because it recites muting a current encoded frame, whether or not it has an error, if the error sum over the length of dynamic template, encompassing a plurality of previous encoded frames, exceeds a threshold, said dynamic template length being computed in a predetermined way from on an error rate of the encoded bitstream. McMullan Jr. et al. and Wong et al. fail to teach nor reasonably suggest this in combination. While McMullan Jr. in effect have a dynamic template for muting the current frame, its size is determined by the existence of an error in the current frame that makes an accumulated error count exceed a threshold, the increments in said frame error count being based on error importance, so that the resultant template length is not precomputed based on an error count in a previous such dynamic template. Wong et al. teach bad frame indications for muting a speech frame based on the sum of confidence measures for each bit of a frame.

Dependent **claims 2-7** are allowed because they further limit their parent claims.

15. Claims 12 and 13 contain allowable subject matter. As for **claim 12**, it would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for indication of allowable subject matter:

Claim 12, contains allowable subject matter because it recites muting a current encoded frame, whether or not it has an error, if the error sum over the length of dynamic template, encompassing a plurality of previous encoded frames, exceeds a threshold, said dynamic template length being computed in a predetermined way from on an error rate of the encoded bitstream. McMullan Jr. et al. and Wong et al. fail to teach nor reasonably suggest this in combination. While McMullan Jr. in effect have a dynamic template for muting the current frame, its size is determined by the existence of an error in the current frame that makes an accumulated error count exceed a threshold, the increments in said frame error count being based on error importance, so that the resultant template length is not precomputed based on an error count in a previous such dynamic template. Wong et al. teach bad frame indications for muting a speech frame based on the sum of confidence measures for each bit of a frame.

Dependent **claim 13** would be allowable because it further limits its parent claim.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Wiese et al. (U.S. Publication No. 2002/0082827) discloses error concealment in digital transmissions.
- Sydanmaa et al. (Patent No. 6,687,670 and U.S. Publication No. 2002/0147590) discloses error concealment in digital audio receiver.

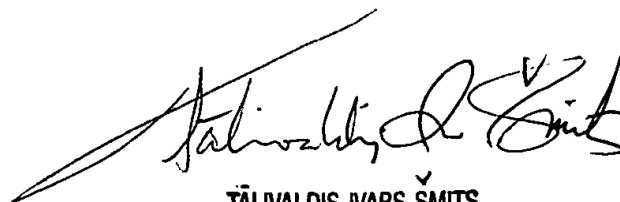
- McMullan, Jr. et al. (U.S. Patent No. 5,271,011) discloses a digital audio data muting system and method with a variable-length template.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R Jackson whose telephone number is 703.305.5593. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis I. Smits can be reached on 703. 306-3011. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRJ
June 3, 2004



TĀLIVALDIS IVARS ŠMITS
PRIMARY EXAMINER